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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/903,481 | 07/12/2001 | Toichi Chikuma | Q65403 | 9328 |

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

NICOLAS, WESLEY A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1742

DATE MAILED: 06/02/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,481

Applicant(s)

CHIKUMA, TOICHI

Examiner

Wesley A. Nicolas

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 7 and 10 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 3-4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because it appears that only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Morel et al. (4,049,528).

Claim 1 is rejected because Morel et al. teach an electrolysis method wherein a positive electrode and a negative electrode are immersed in an electrolysis tank to cause electrolysis to occur, comprising the step of:

- applying an opposite magnetic field for canceling a magnetic field produced by main electric current and ion current flowing in the electrolyte from said positive electrode to said negative electrode (col. 2, lines 14-16).

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Claim 2 is rejected because Morel et al. teach an electric current of a direction opposite to that of the main electric current and the ion current flowing in the electrolyte from said positive electrode to said negative electrode is supplied to an electric circuit provided between but separate from said positive electrode and said negative electrode to produce the opposite magnetic field which cancels the magnetic field produced by the main electric current and the ion current flowing in the electrolyte (col. 2, lines 14-16).

Claim 8 is rejected because Morel et al. teach an electrolysis apparatus, comprising:

- an electrolysis tank (Fig. 1, tank 1);
- a positive electrode and a negative electrode immersed in electrolyte in said electrolysis tank to cause electrolysis to occur (col. 3, lines 1-18: "cathode" and "anode"); and
- means applying an opposite magnetic field for canceling a magnetic field produced by main electric current and ion current flowing in the electrolyte from said positive electrode to said negative electrode (col. 2, lines 14-16).

Claim 9 is rejected because Morel et al. teach of an electric circuit provided between but separate from said positive electrode and said negative electrode for supplying electric current to flow in a direction opposite to that of the main electric current and the ion current flowing in the electrolyte from said positive electrode to said negative electrode to produce the opposite magnetic field which cancels the magnetic field produced by the main electric current and the ion current flowing in the electrolyte (col. 2, lines 14-16).

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morel et al. (4,049,528) as applied to claim 1 above, and further in view of Kunimatsu et al. (5,423,967).

Morel et al. are as applied, argued, and disclosed above and incorporated herein but fail to specifically teach of a negative electrode which occludes hydrogen.

Kunimatsu et al. teach of a negative electrode which occludes hydrogen (col. 3, lines 19-26: "occlusion of hydrogen in a cathode").

Claim 5 is rejected because it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified Morel et al. to use the hydrogen occluding electrode of Kunimatsu et al. because Kunimatsu et al. teach of a negative electrode which occludes hydrogen (col. 3, lines 19-26: "occlusion of

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hydrogen in a cathode") which would have increased the utility of the electrolytic apparatus.

Allowable Subject Matter

7. Claims 6-7 and 10 are allowed over the prior art of record.
8. Claims 3-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 6-7 and 10, the specific electrolysis method and apparatus which uses an electrically insulating nonmagnetic partition which produces magnetic fields which cancel each other was not taught or suggested by the prior art of record.

Regarding claims 3-4, the specific use of a permanent magnet or an auxiliary positive electrode to modify the electric field was not taught or suggested by the prior art of record.

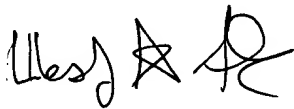
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley Nicolas whose telephone number is (703)305-0082. The examiner can normally be reached on Mon.-Thurs. from 7am to 5pm.

The Supervisory Primary Examiner for this Art Unit is Roy King whose telephone number is (703) 308-1146.

The fax number for this Group is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Wesley A. Nicolas', with a stylized flourish at the end.

Wesley A. Nicolas

May 30, 2003